

ABSTRACT

Featured is a method or process for reducing contention of a highly contended software lock(s) that is protecting multiple data items, where the software has a plurality of code paths accessing the data items. The method includes creating additional partition locks to protect subsets of the data items protected by the existing global lock. Such a method further includes acquiring all partition locks and the global lock, wherever a global lock would have been acquired to protect data. The method also includes identifying one or more heavily used code paths and determining which data items are touched by the identified one or more heavily used code paths. These data items are then moved into a partition, if they were not partitioned earlier. The locking requirements for each of the identified one or more heavily used code paths are optimized to match the reduced locking requirements because of the partitioned data items. In other words the locking requirements are reduced so only the locks for the partitions including the data items that touch the code path are acquired. In more specific embodiments, the so-modified software is evaluated to determine if there is an acceptable increase in overall system performance resulting from the optimization of the locking requirements. If the modified system's performance is not acceptable, then the next most heavily used code path is identified and the locking requirements for this code path are optimized. Such optimization is continued until the system exhibits an acceptable overall system performance or all code paths are optimized.